IN THE CLAIMS:

Please amend the claims as follows. Any other difference between the claims below and the previous state of the claims is unintentional and in the nature of a typographical error.

1. (Currently Amended) For use in a fixed-size packet switch, a switch fabric comprising:

an input ~~scheduler~~ that receives at least one incoming fixed data packet to be forwarded into a ~~simulated~~ switch fabric to at least one N input buffer[[s]], wherein the N input buffer is configured to receive at least one incoming fixed data packet[[s]] at a first data rate and is further configured to output said at least one incoming fixed data packet at a second data rate, wherein the second data rate is at least twice the first data rate and is configured to promote an emulated buffered crossbar; and wherein the queuing of the N input buffer is performed through a virtual output queue in the ~~simulated~~ switch fabric where the incoming fixed data packets are queued according to their destination port;

an output ~~scheduler~~ that receives at least one outgoing fixed data packet to be forwarded out of the simulated switch to at least one N output buffer[[s]], wherein the N output buffer is configured to receive fixed-size data packets at said second data rate and configured to output said fixed-size data packets to an output port at said first data rate, wherein said N output buffers are internal to said ~~simulated~~ switch fabric and are external to said output port, wherein the input and output scheduler schedule the at least one incoming fixed data packet and one ~~incoming~~ outgoing fixed data packet once per timeslot; and

a bufferless, non-blocking interconnecting network configured to receive from said N input buffers said fixed-size data packets at said second data rate and configured to transfer said fixed-size data packets to said N output buffers at said second data rate; and

a scheduling controller connected to the bufferless, non-blocking interconnecting network, wherein the scheduling controller is configured to determine a maximal configuration of the bufferless, non-blocking interconnecting network and emulated crossbar based upon the data in the N input buffers by finding a maximal matching of inputs and outputs currently queued at the N input buffers, ~~and controls the~~ configures ~~configuration of~~ the bufferless, non-blocking interconnecting according to the maximal matching ~~network~~ and wherein the scheduling controller further promotes a transmitting of a matched head of line cell at each virtual output queue and repeats the configuration of the crossbar twice per time slot.

2. (Original) The switch fabric as set forth in Claim 1 wherein said bufferless, non-blocking interconnecting network comprises a bufferless crossbar.

3. (Original) The switch fabric as set forth in Claim 1 wherein each of said N input buffers is at least twice the size of each of said N output buffers.

4. (Currently Amended) A method of operating a switch fabric in a fixed-size packet switch, the method comprising the steps of:

storing incoming fixed-size data packets from input port in N input buffers at a first data rate, wherein said N input buffers are internal to said switch fabric and are external to said input port;

outputting the fixed-size data packets from the N input buffers at a second data rate equal to at least twice the first data rate;

transferring the fixed-size data packets output by the N input buffers at the second data rate through a bufferless, non-blocking interconnecting network to N output buffers using an emulated crossbar, wherein said N output buffers are internal to said switch fabric and the bufferless, non-blocking interconnecting network is connected to a scheduling controller, and wherein the scheduling controller determines a maximal configuration of the bufferless, non-blocking interconnecting network by finding a maximal matching of inputs and outputs currently queued at the N input buffers;

and emulated crossbar based upon the data in the N input buffers and controls the configuration of the bufferless, non-blocking interconnecting network according to the maximal matching;

storing the fixed-size data packets transferred through the bufferless, non-blocking interconnecting network in the N output buffers at the second data rate; and

outputting the fixed-size data packets from the N output buffers at the first data rate to an output port, wherein said N output buffers are external to said output port, wherein control of delay,

jitter, throughout, and ordering of packets is controlled through a the performance of the switch is controlled by the controller adjusting the emulated crossbar and through a virtual output queue.

5. (Original) The method as set forth in Claim 4 wherein the bufferless, non-blocking interconnecting network comprises a bufferless crossbar.

6. (Original) The method as set forth in Claim 5 wherein each of the N input buffers is at least twice the size of each of the N output buffers.

7. (Currently Amended) A fixed-size data packet switch comprising:

N input ports to receive incoming fixed-size data packets at a first data rate and to output said fixed-size data packets at said first data rate;

N output ports to receive fixed-size data packets at said first data rate and to output said fixed-size data packets at said first data rate; and

a switch fabric interconnecting said N input ports and said N output ports comprising:

N input buffers to receive incoming fixed-size data packets from at least one of said N input ports at said first data rate and to output said fixed-size data packets at a second data rate equal to at least twice said first data rate, wherein said N input buffers are internal to said switch fabric and are external to said N input ports and queuing the fixed-size data packets through a virtual output queue according to their destination port;

N output buffers to receive fixed-size data packets at said second data rate and to output said fixed-size data packets at said first data rate to said at least one of said N output ports, wherein said N output buffers are internal to said switch fabric and are external to said N output ports, wherein an input and output scheduler schedule the at least one incoming data packet and one incoming fixed data packet once per timeslot;

a bufferless, non-blocking interconnecting network to receive from said N input buffers said fixed-size data packets at said second data rate and to transfer said fixed-size data packets to said N output buffers at said second data rate; and

a scheduling controller connected to the bufferless, non-blocking interconnecting network wherein the scheduling controller is configured to emulate a crossbar within the bufferless, non-blocking interconnecting network and determines a maximal configuration of the bufferless, non-blocking interconnecting network based upon the data in the N input buffers by finding a maximal matching of inputs and outputs currently queued at the N input buffers, ~~and controls the~~ configures ~~configuration of~~ the bufferless, non-blocking interconnecting according to the maximal matching ~~network~~ and wherein the scheduling controller further promotes a transmitting of a matched head of line cell at each virtual output queue and repeats the configuration of the crossbar twice per time slot.

8. (Original) The fixed-size data packet switch as set forth in Claim 7 wherein said bufferless, non-blocking interconnecting network comprises a bufferless crossbar.

9. (Original) The fixed-size data packet switch as set forth in Claim 7 wherein each of said N input buffers is at least twice the size of each of said N output buffers.

10. (Previously Presented) The fixed-size data packet switch as set forth in Claim 7 wherein the scheduling controller schedules transfer of said fixed-size data packets from said N input ports to said switch fabric.

11. (Previously Presented) The fixed-size data packet switch as set forth in Claim 10 wherein said scheduling controller schedules transfer of said fixed-size data packets from said N output ports to an external device.

12. (Previously Presented) The fixed-size data packet switch as set forth in Claim 10 wherein said scheduling controller schedules transfer of said fixed-size data packets from said N input buffers to said bufferless, non-blocking interconnecting network.

13. (Previously Presented) The fixed-size data packet switch as set forth in Claim 12 wherein said scheduling controller schedules transfer of said fixed-size data packets from said N output buffers to said N output ports.

14. (Currently Amended) A communication network to transfer data in fixed-size packets between a plurality of end-user devices, said communication network comprising:

a plurality of fixed-size data packet switches, at least one of said fixed-size data packet switches comprising:

N input ports configured to receive incoming fixed-size data packets at a first data rate and to output said fixed-size data packets at said first data rate;

N output ports configured to receive fixed-size data packets at said first data rate and to output said fixed-size data packets at said first data rate; and

a switch fabric interconnecting said N input ports and said N output ports comprising:

N input buffers configured to receive incoming fixed-size data packets at said first data rate and to output said fixed-size data packets at a second data rate equal to at least twice said first data rate, wherein said N input buffers are internal to said switch fabric and are external to said N input ports and queuing the incoming fixed-size data packets through a virtual output queue according to their destination port;

N output buffers configured to receive fixed-size data packets at said second data rate and to output said fixed-size data packets at said first data rate, wherein said N output buffers are internal to said switch fabric and are external to said N output ports wherein [[the]] an input and output scheduler schedule the at least one incoming data packet and one incoming fixed data packet once per timeslot;

a bufferless, non-blocking interconnecting network configured to receive from said N input buffers said fixed-size data packets at said second data rate and to transfer said fixed-size data packets to said N output buffers at said second data rate; and

a scheduling controller connected to the bufferless, non-blocking interconnecting network, wherein the scheduling controller determines a maximal configuration of the bufferless, non-blocking interconnecting network based upon the data in the N input buffers by finding a maximal matching of inputs and outputs currently queued at the N input buffers, ~~and controls the~~ configures ~~configuration of~~ the bufferless, non-blocking interconnecting according to the maximal matching ~~network~~ and wherein the scheduling controller further promotes a transmitting of a matched head of line cell at each virtual output queue and repeats the configuration of the crossbar twice per time slot.

15. (Original) The communication network as set forth in Claim 14 wherein said bufferless, non-blocking interconnecting network comprises a bufferless crossbar.

16. (Original) The communication network as set forth in Claim 14 wherein each of said N input buffers is at least twice the size of each of said N output buffers.

17. (Previously Presented) The communication network as set forth in Claim 14 further comprising a scheduling controller schedules transfer of said fixed-size data packets from said N input ports to said switch fabric.

18. (Previously Presented) The communication network as set forth in Claim 17 wherein said scheduling controller schedules transfer of said fixed-size data packets from said N output ports to an external device.

19. (Previously Presented) The communication network as set forth in Claim 17 wherein said scheduling controller schedules transfer of said fixed-size data packets from said N input buffers to said bufferless, non-blocking interconnecting network.

20. (Previously Presented) The communication network as set forth in Claim 19 wherein said scheduling controller schedules transfer of said fixed-size data packets from said N output buffers to said N output ports.